

1/22

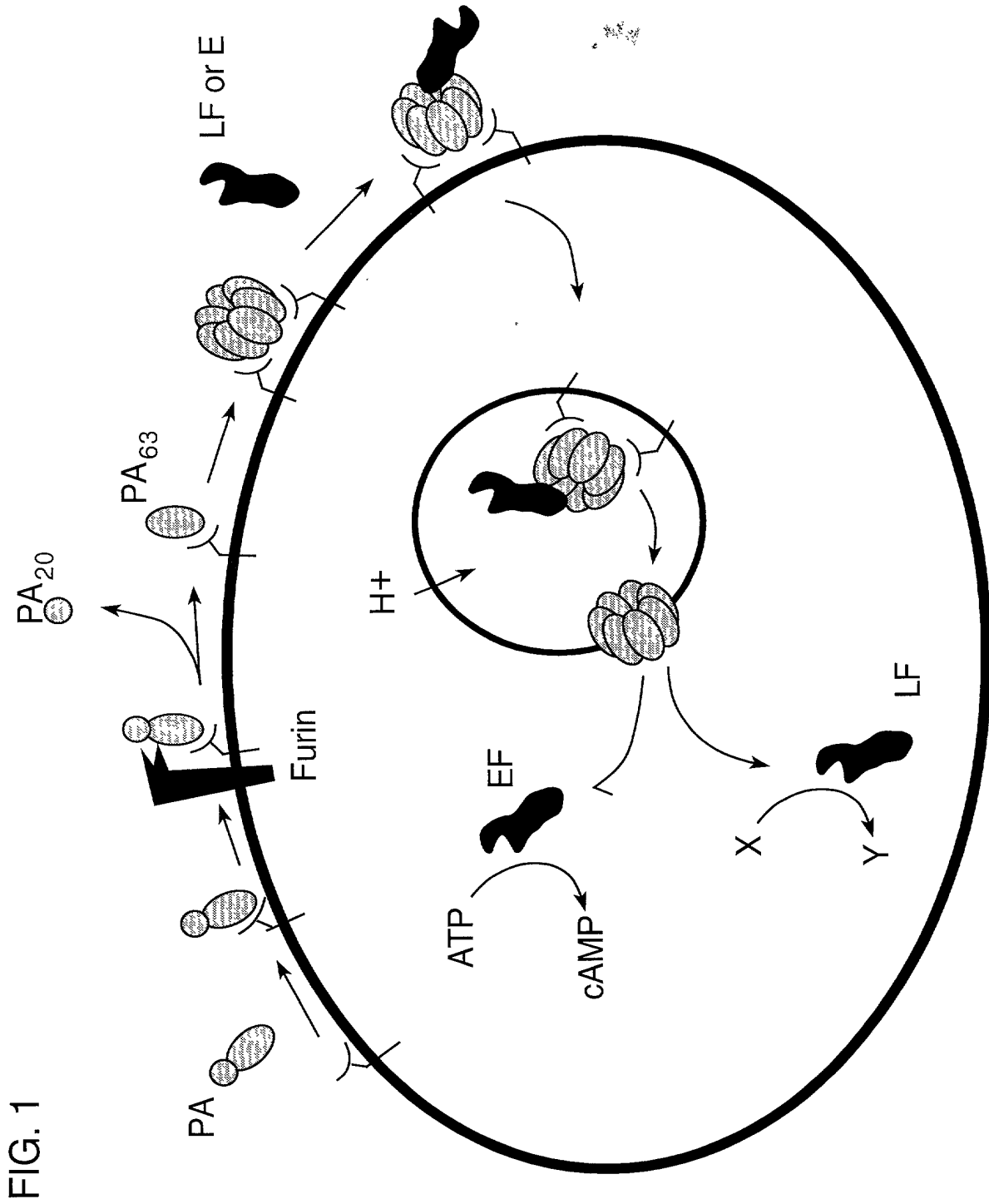


FIG. 2A

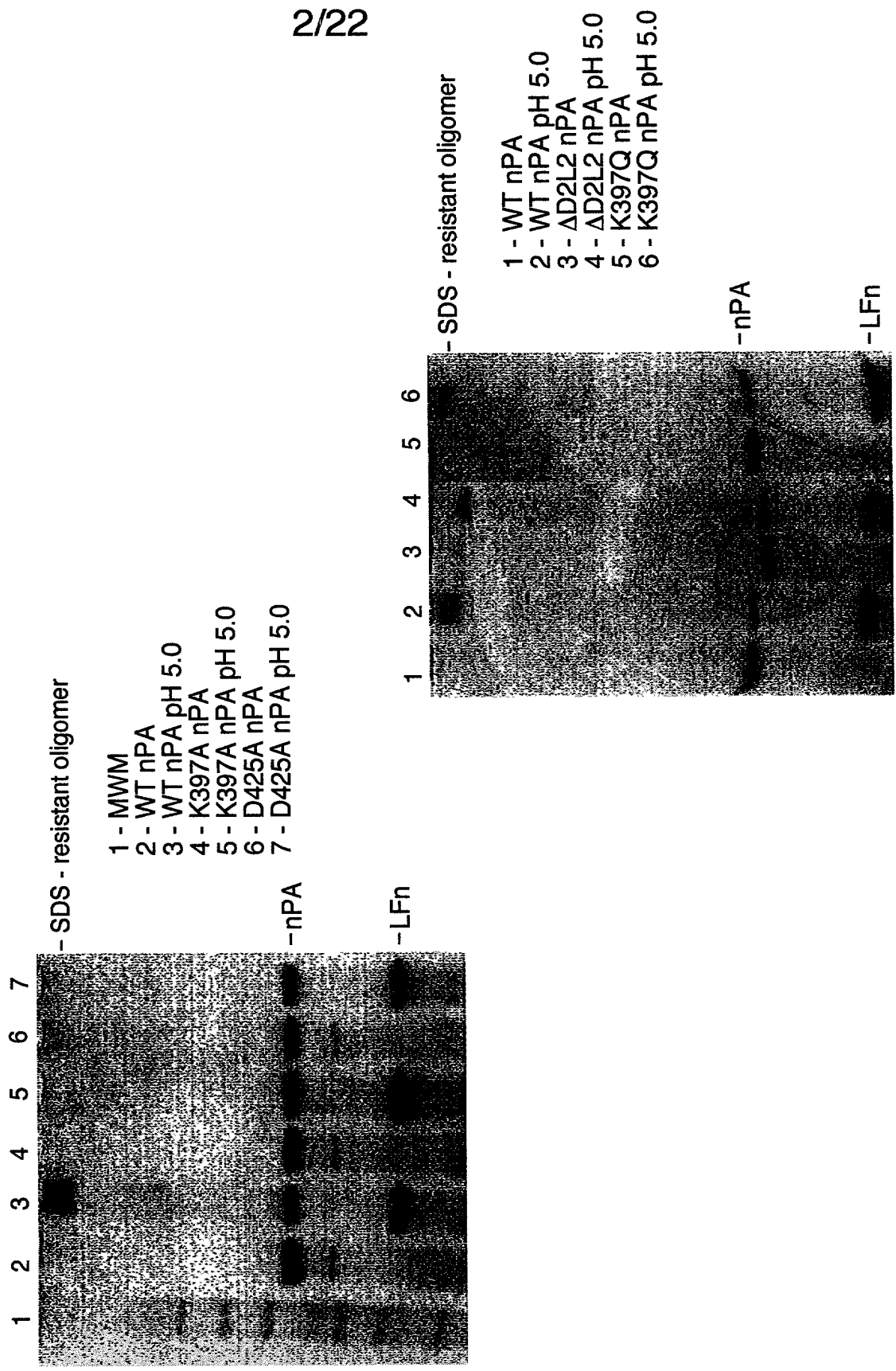


FIG. 2B

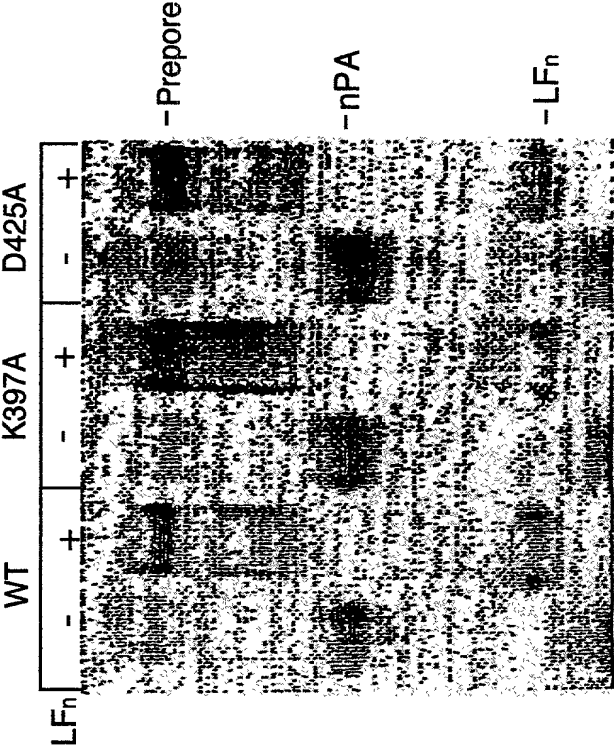
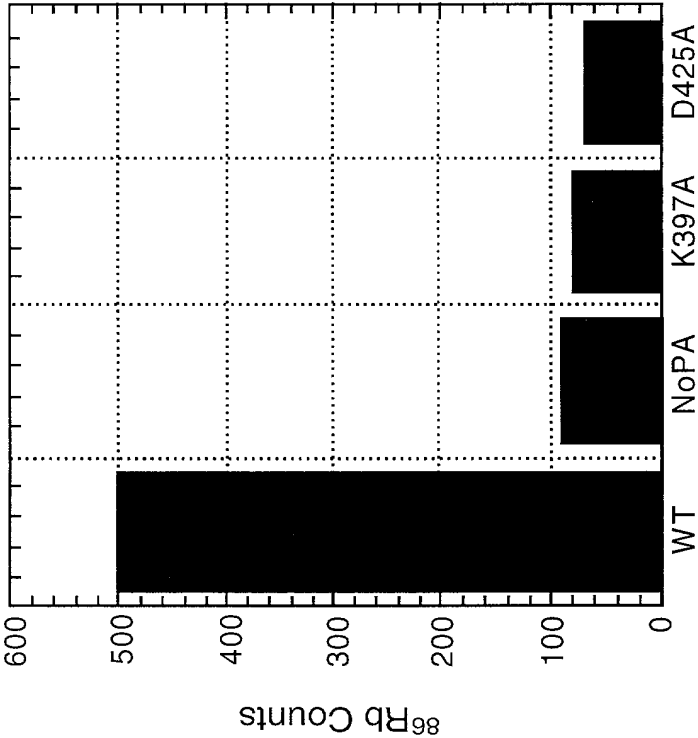
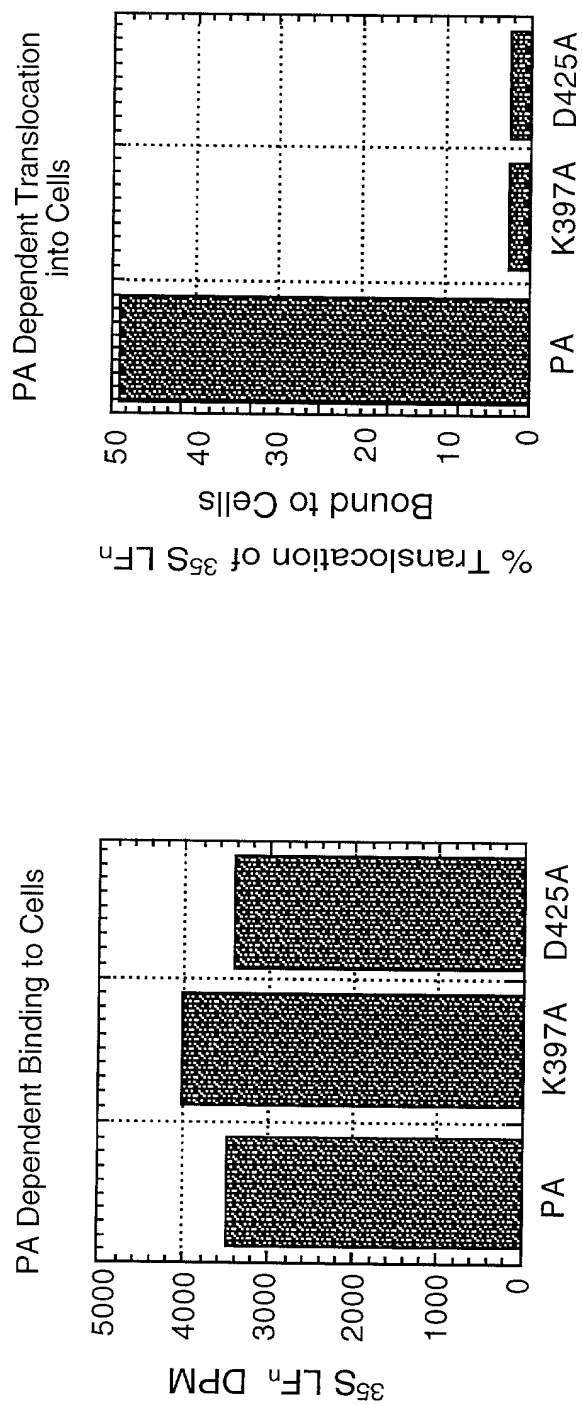


FIG. 3



5/22

FIG. 4



6/22

FIG. 5

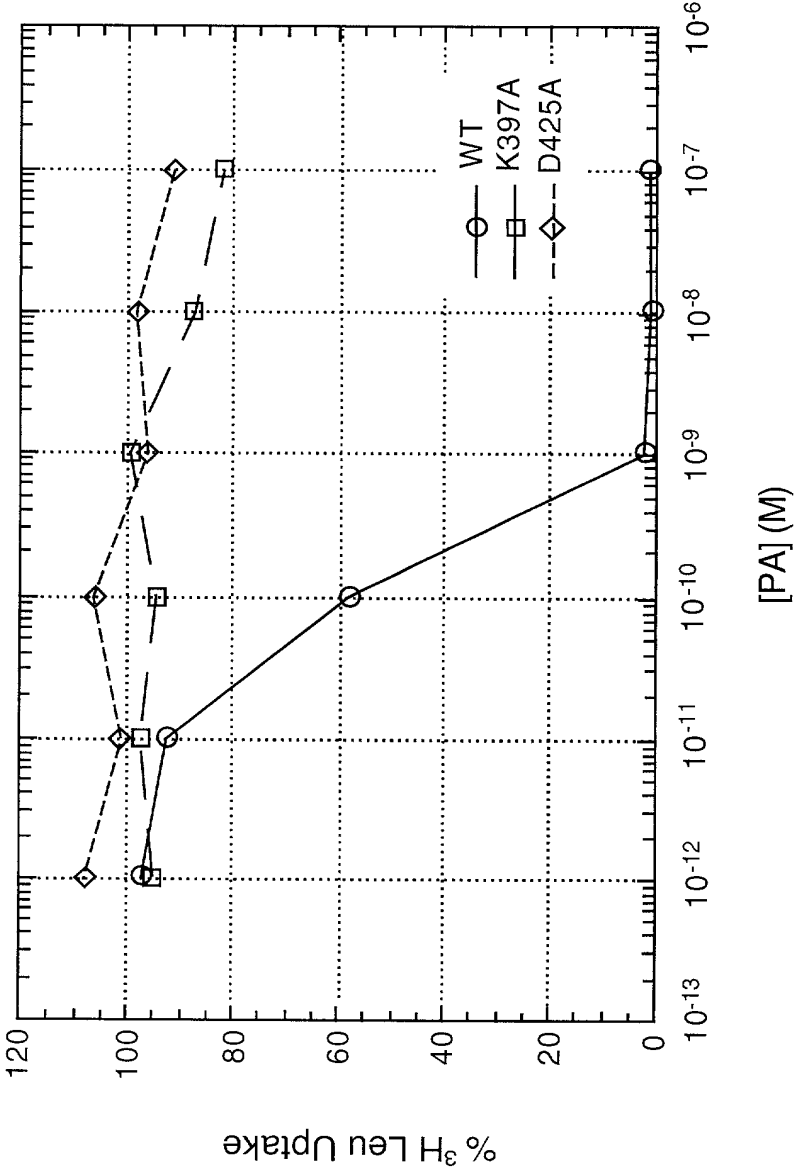


FIG. 6

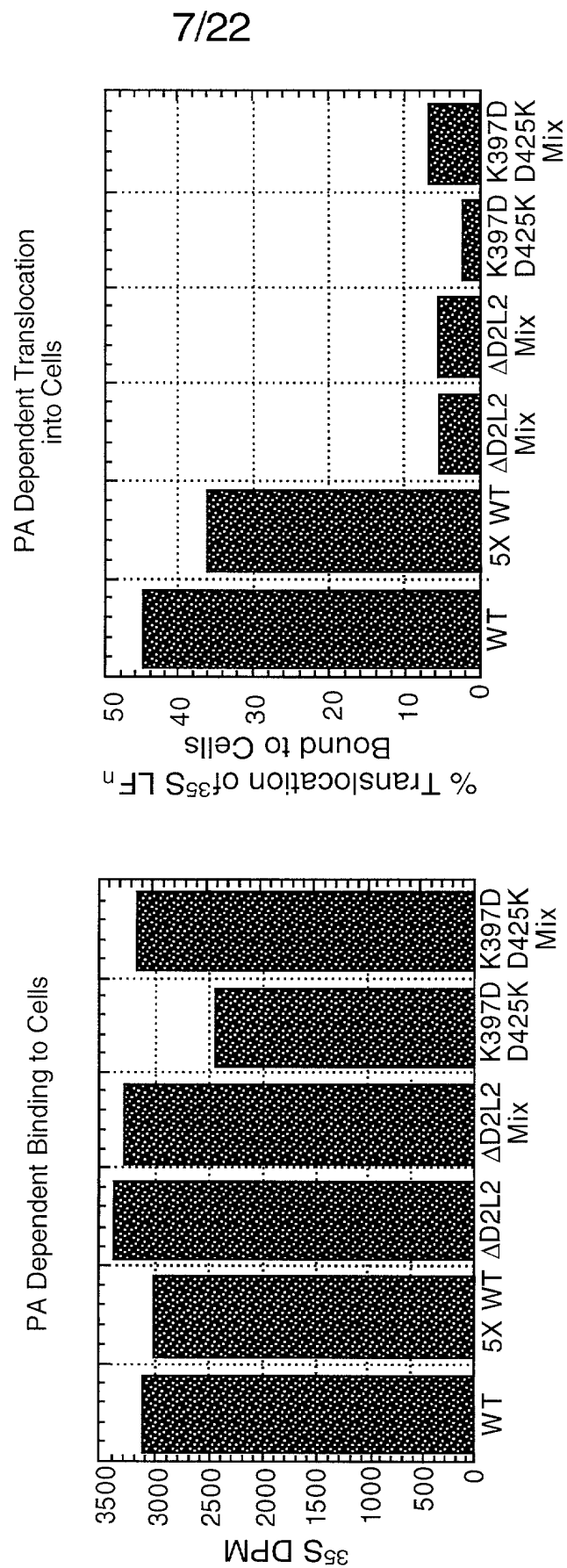
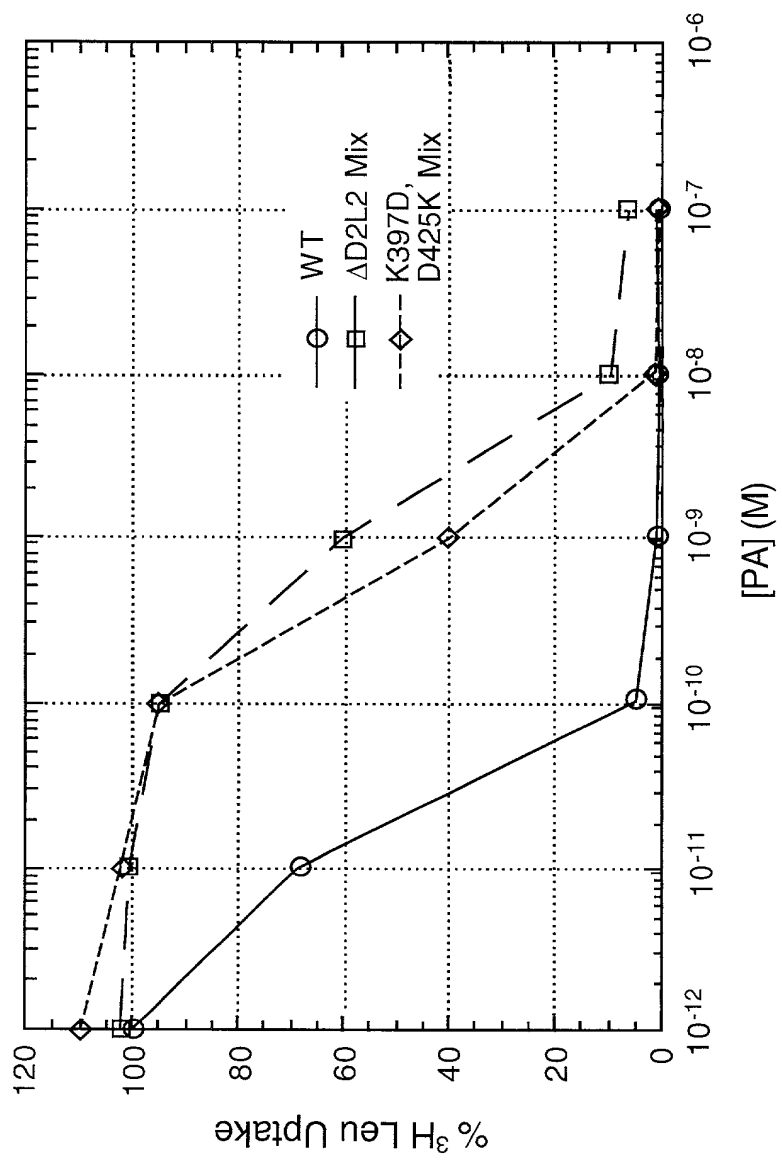
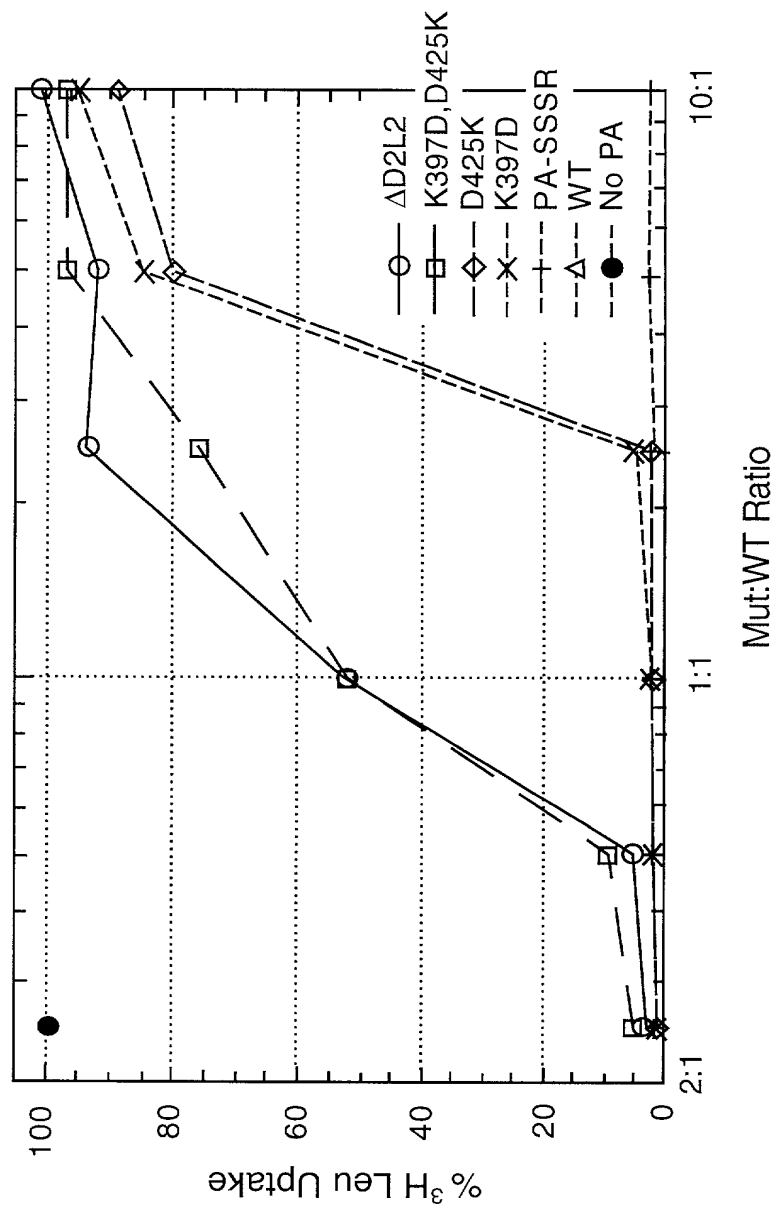


FIG. 7



9/22

FIG. 8A



10/22

FIG. 8B

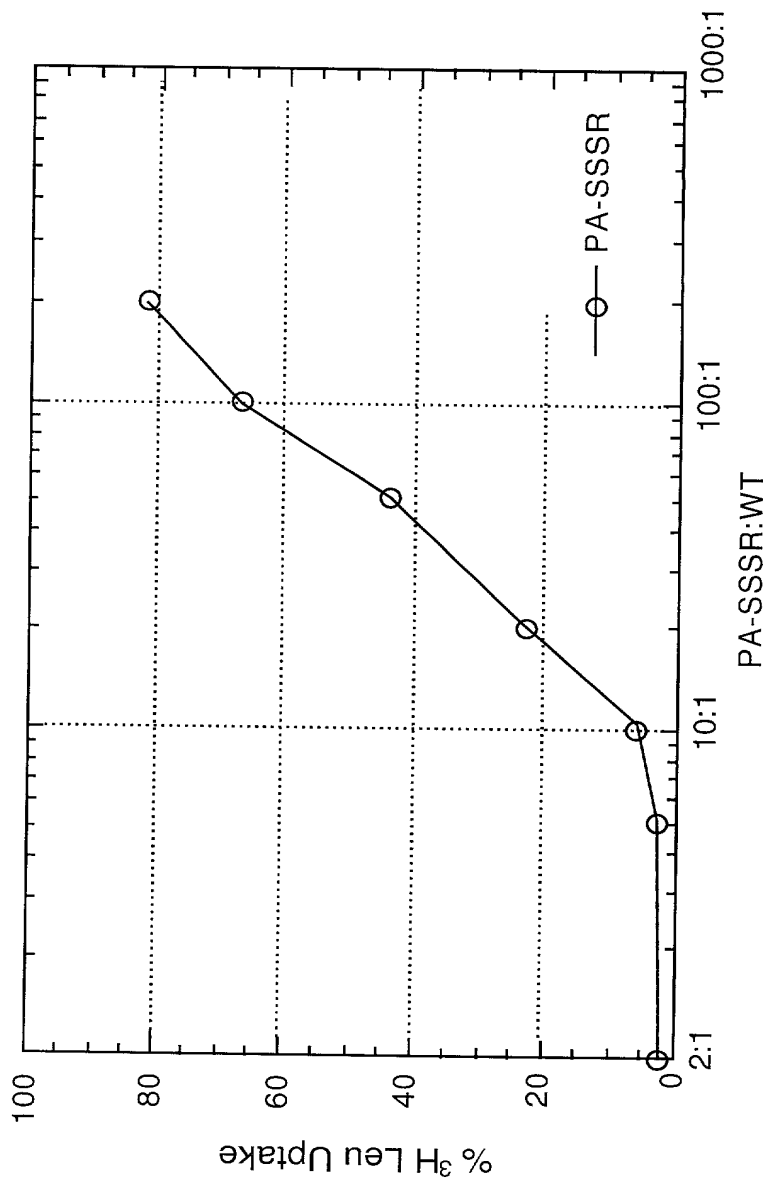
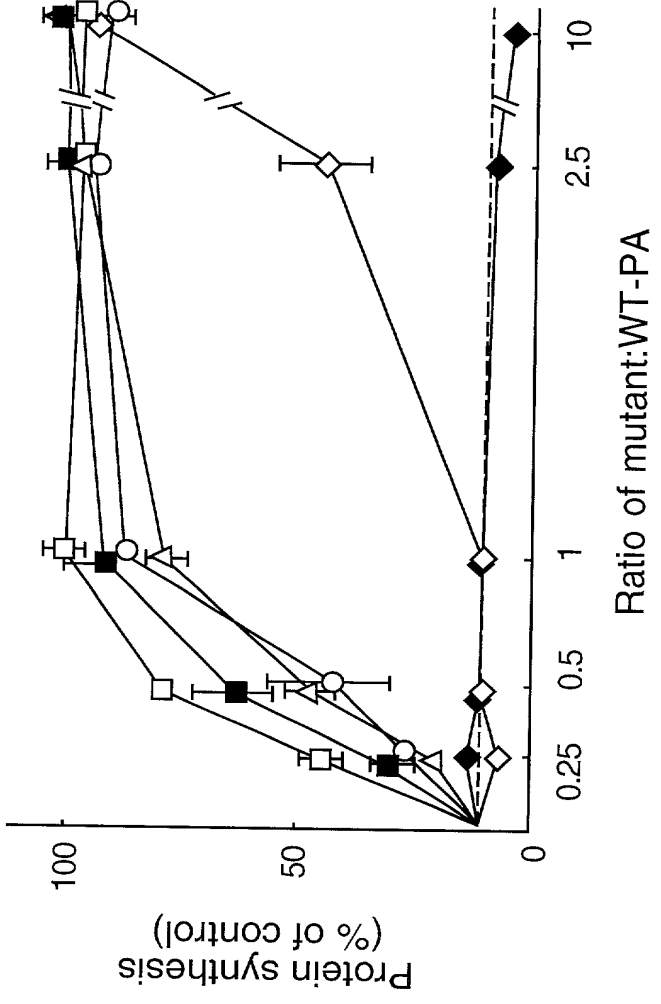
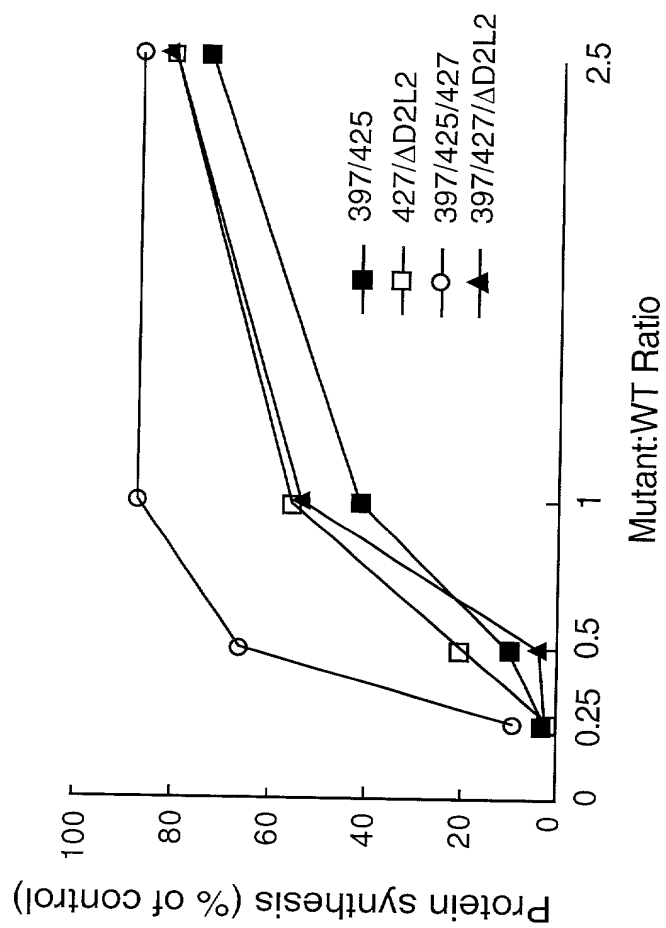


FIG. 9



12/22

FIG. 10



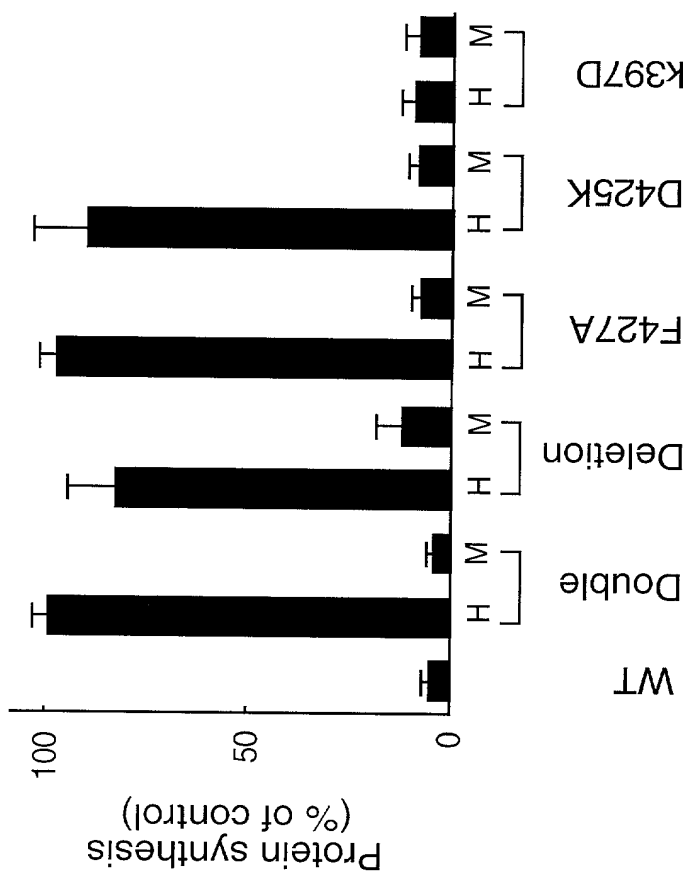


FIG. 11

FIG. 12

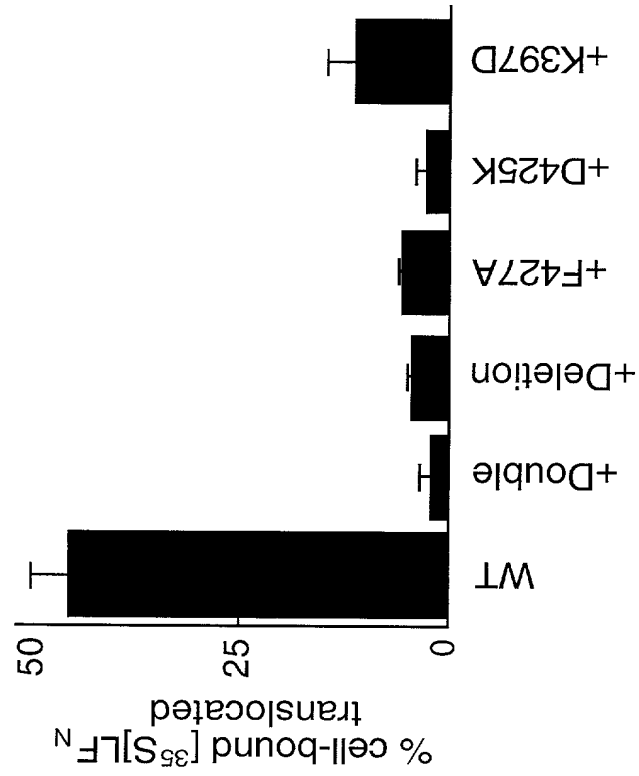


FIG. 13

Figure 13: SEQ ID No.: 21

EVKQENRLNESESSQGLLGYFSDLNFAQPMVVTSSTTGDLSIPSSSELENIPSEN
QYFQSAIWSGFIKVKKSDEYTFA
TSADNHVTMWVDDQEVINKASNSNKIRLEKGRLYQIKIQYQRENPTTEKGLDFKL
YWTDSQNKKEVISSDNLQLPELKQS
SNSRKKRSTSAIPTVDRDNDGIPDSLEVEGYTVDVKNKRTFLSPWISNIHEKKG
LTKYKSSPEKWSASTASDPYSDFEKVT
GRIDKNVSPEARHPLVAAYPVHVDMENIILSKNEDQSTQNTDSETRTISKNTSTS
RTHTSEVHGNAEVHASFFDIGGSV
SAGFSNSNSTVAIDHSLSLAGERTWAETMGLNTADTARLNANIRYVNTGTAPIY
NVLPPTSLVLGKNQTLATKAKENQ
LSQILAPNNYYPCKNLAPIALNAQDDFSSPTITMNNYQFLELEKTKQLRLDQV
YGNATYNFENGRRVVDGTGSNWSEV
LPQIQUETARIUFNGKDLNLVERRIAAVNPSDPLETTKPDMTLKEALKIAFGFNEPN
GNLQYQGGKDIETEFDFNFDQQTSTQ
NIKNNQLAELNATNIYTVLDKIKLNAKMNILIRDKRFHYDRNNIAVGADESVVKEA
HREVNSSTEGLLNIDKDIRKILS
GYTVEIEDTEGLKEVINDRYDMLNISSLRQDGKTFIDFKKYNDKPLIYISNPYKV
NVYAVTKENTINPSENGDTSTNG
IKKILFSKKGYEIGZ

FIG. 14

Figure 14: SEQ ID No.: 22

GAAGTTAAACAGGAGAACCGGTTATTAAATGAATCAGAATCAAGTTCCCAGG
GGTTACTAGGATACTATTTTAGTGATT
GAATTTTCAAGCACCCATGGTGGTTACCTCTTCTACTACAGGGGATTTATCTA
TTCCTAGTTCTGAGTTAGAAAATATTC
CATCGGAAAACCAATATTTTCAATCTGCTATTTGGTCAGGATTTATCAAAGTT
AAGAAGAGTGATGAATATACATTTGCT
ACTTCCGCTGATAATCATGTAACAATGTGGGTAGATGACCAAGAAGTGATTA
ATAAAGCTTCTAATTCTAACAAAATCAG
ATTAGAAAAAGGAAGATTATATCAAATAAAAAATTCAATATCAACGAGAAAAAT
CCTACTGAAAAAGGATTGGATTTCAAGT
TGTACTGGACCGATTCTCAAAATAAAAAAGAAGTGATTTCTAGTGATAACTT
ACAATTGCCAGAATTAACAAAATCT
TCGAACCTCAAGAAAAAAGCGAAGTACAAGTGCTGGACCTACGGTTCCAGACC
GTGACAATGATGGAATCCCTGATTCATT
AGAGGTAGAAGGATATACGGTTGATGTCAAAAATAAAAGAACTTTTCTTTCA
CCATGGATTTCTAATATTCATGAAAAGA
AAGGATTAACCAAATATAAATCATCTCCTGAAAAATGGAGCACGGCTTCTGA
TCCGTACAGTGATTTGAAAAGGTTACA
GGACGGATTGATAAGAATGTATCACCAGAGGCAAGACACCCCCTTGTGGCAG
CTTATCCGATTGTACATGTAGATATGGA
GAATATTATTCTCTCAAAAAATGAGGATCAATCCACACAGAATACTGATAGT
GAAACGAGAACAATAAGTAAAAATACTT
CTACAAGTAGGACACATACTAGTGAAGTACATGGAAATGCAGAAGTGCATGC
GTCGTTCTTTGATATTGGTGGGAGTGTA
TCTGCAGGATTTAGTAATTCGAATTCAAGTACGGTCGCAATTGATCATTCACT
ATCTCTAGCAGGGGAAAGAACTTGGGC
TGAAACAATGGGTTTAAATACCGCTGATACAGCAAGATTAAATGCCAATATT
AGATATGTAAATACTGGGACGGCTCCAA
TCTACAACGTGTTACCAACGACTTCGTTAGTGTTAGGAAAAAATCAAACACT
CGCGACAATTAAAGCTAAGGAAAACCAA
TTAAGTCAAATACTTGCACCTAATAATTATTATCCTTCTAAAAACTTGGCGCC
AATCGCATTAAATGCACAAGACGATT
CAGTTCTACTCCAATTACAATGAATTACAATCAATTTCTTGAGTTAGAAAAAA
CGAAACAATTAAGATTAGATACGGATC
AAGTATATGGGAATATAGCAACATACAATTTTGAAAATGGAAGAGTGAGGGT
GGATACAGGCTCGAACTGGAGTGAAGTG
TTACCGCAAATTCAAGAAACAACTGCACGTATCATTTTTAATGGAAAAGATTT
AAATCTGGTAGAAAGGCGGATAGCGGC
GGTTAATCCTAGTGATCCATTAGAAACGACTAAACCGGATATGACATTAAAA
GAAGCCCTTAAATAGCATTGATTGA
ACGAACCGAATGGAACTTACAATATCAAGGGAAAGACATAACCGAATTTG
ATTTTAATTTTCGATCAACAAACATCTCAA
AATATCAAGAATCAGTTAGCGGAATTAAACGCAACTAACATATATACTGTAT
TAGATAAAATCAAATTAAATGCAAAAAT

FIG. 14 (CONTINUED)

GAATATTTTAATAAGAGATAAACGTTTTCATTATGATAGAAATAACATAGCA
GTTGGGGCGGATGAGTCAGTAGTTAAGG
AGGCTCATAGAGAAAGTAAATTAAATTCGTCAACAGAGGGATTATTGTTAAATAT
TGATAAGGATATAAGAAAAATATTATCA
GGTTATATTGTAGAAATTGAAAGATACTGAAGGGCTTAAAGAA GTTATAAATG
ACAGATAATGATATGTTGAATATTTCTAG
TTTACGGCAAGATGGA AAAACATTTATAGATTTTAAAAATATAATGATAAA
TTACCGTTATATATAAGTAATCCCAATT
ATAAGGTAAATGTATATGCTGTACTAAAGAAACACTATTATTAAATCCTAGT
GAGAAATGGGGATACTAGTACCAACGGG
ATCAAGAAAAATTTTAATCTTTTCTAAAAAAGGCTATGAGATAGGATAA

FIG. 15

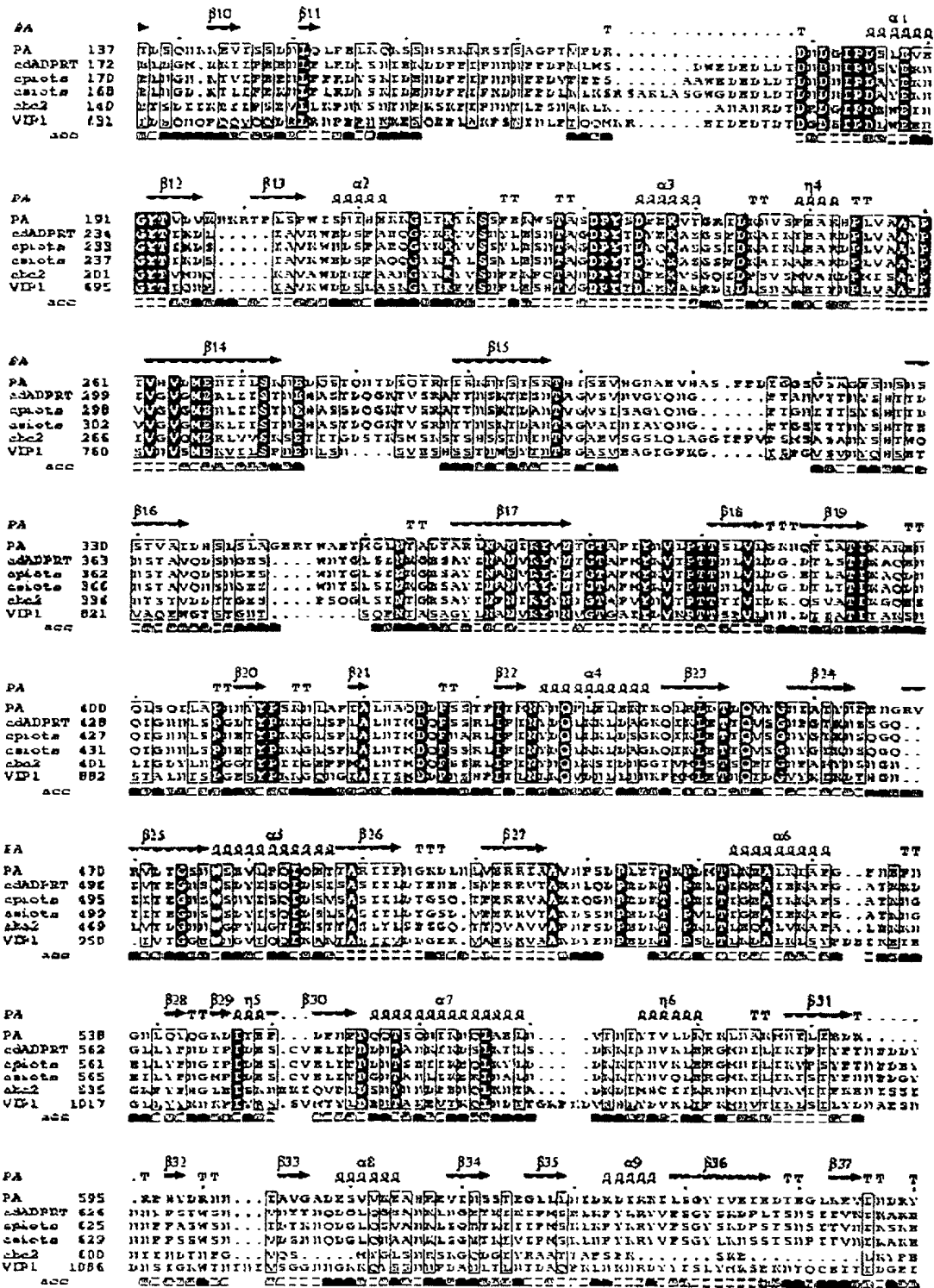


FIG. 15 (CONTINUED)

PA	681	.....YHDKLFLNLI	TT	.....	β40	.....	η?	.....	TT	
PA	681	.....YHDKLFLNLI	TT	.....	β40	.....	η?	.....	TT	
cdADPRT	763	DAHKIYPADLHFNPF	GHIIYIDGNMIFAP	QTHKALDYO	KRVKVEALQ	YSGF	DI	IGIKR	EMRN	LGDP
cp1cta	762	DAHKIYADIKLDP	GHIIYIDGNYFZP	QTHKALDYO	KRVKVEALQ	YSGF	DI	IGIKR	EMRN	LGDP
cp1cta	766	DAHKIYADLSP	HQSHAHYILGLYFZP	QTHKALDYO	KRVKVEALQ	YSGF	DI	IGIKR	EMRN	LGDP
cd2	665	.....LPHLLIY	SSFLKGYVDEPPY	.....	.....	.....	.....	.....	.....	.....
VP1	1226	SRVGIKLEHGILIK	GGIHYGZFDEAS	FHLEP	LQNVVINKY	VYSS	ELGPN	USDT	LES	KIKKUGTIK
acc		-----	-----	-----	-----	-----	-----	-----	-----	-----
PA	721	.....IRKILFP	SRAGV	IG	.....	.....	.....	.....	.....	.....
PA	721	.....IRKILFP	SRAGV	IG	.....	.....	.....	.....	.....	.....
cdADPRT	833	HQPKIINYVHLKS	YFISGENH	MYKKLRL	RAIIFD	DRLL	VL	SV	.....	.....
cp1cta	832	HQPKIINYVHLKS	YFISGENH	MYKKLRL	RAIIFD	DRLL	VL	SV	.....	.....
cp1cta	836	HQPKIINYVHLKS	YFISGENH	MYKKLRL	RAIIFD	DRLL	VL	SV	.....	.....
cd2	708	.....	LSGVPL	LELDR	LL	.....	.....	.....	.....	.....
VP1	1296	FDFIKYSNIEHQ	LFYD	SGLL	MDPKIN	RI	YLGK	KHIV	FH	RHK
acc		-----	-----	-----	-----	-----	-----	-----	-----	-----

```
FA
PA
adADPRT
cpa6aa
cmta
vbl2
vbl1
MLEMEGELEPMVSEKKLOYVINIYVLSTIVYSISLLDNEVEILAEQLNINSQSKYTDLQNLIKITDKVEEPKEDS
```

```

FA
FA
cdADPPT
cp1.cta
cp2.cta
cb2.cta
VIB1
FEALNKGSGKKKKKFMALITAEIGMUNDELUNHNUAIAHYKEITE SIAGSFELE INULKEIDRMHEDET NLSII

```

```

FA
FA
c3ADPRT
cpietn
csetn
c2c2
WRL1

```

```

FA
PA
csADPRT
cs1sta
cs2sta
csb2
VIP1
SGKGGTTFPKAGVFLNHNSEYKMLIDNGYKVVHVPVSRVVKKGVECLQIEGTLKESLDFANDINAEASHWG

```

```

PA
PA
cdADPST
cpiots
cniots
cbz2
vbl1
MKNIYEAWKDLTDSQREALLGYARQDYKEIKNNYLRNQGSGHEKRLDAQIKNI SDALGKKFIFENITVYRM

```

```

PA
PA
cdADPRT
cpiots
cpiots
cbz
cbz
WIPI
CGMFEFGVOISDFLFSLRDPFEEQFLNTIKEDKGYKSTSLSESRLLAAGSERRILELQVFRGSGTGAYLSAI

```

```

FA                                     1
ca                                     2
caADPRT                             .....E
cpacts                             .....MKIQMRHKRVLSFLT LTAVSQALVVFVYACTSTSHN
cscots                             .....MKIQKKNVFSFLT LTKIKQTLSEYHVAQITITQNL
cscots                             .....MKIKKIK LGLLT CTVLVGQKMTTFYVFAKITITQNY
cbs2                                .....MLSVIE
Vib1                                GGPASEREILLDRSKYHILKVTEV IIRGVKRVVVDATLLTNSRGPSTFFTF SFSTFFTFSDIGSTMTN

```

[illegible][illegible]

PA $\beta 10$ $\beta 11$ T. 150 $\alpha 1$ 190
PA TPLSONKKKEVIVISLSNIPALFLPILKQKSSNSRIARSTISAGFTVIFLR. DDDGDPSSLEVE
cdADPRT EPLGEM.IRIIFLEHEDP LADYSNIEERLWLFIFINHPDFDFKMS. LWEDEDLIDDDPDSVERN
cpioia EPLGEM.IRIIFLEHEDP LADYSNIEERLWLFIFINHPDFDFKMS. LWEDEDLIDDDPDSVERN
cpioia EPLGEM.IRIIFLEHEDP LADYSNIEERLWLFIFINHPDFDFKMS. LWEDEDLIDDDPDSVERN
cbol EPLGEM.IRIIFLEHEDP LADYSNIEERLWLFIFINHPDFDFKMS. LWEDEDLIDDDPDSVERN
VIP1 EPLGEM.IRIIFLEHEDP LADYSNIEERLWLFIFINHPDFDFKMS. LWEDEDLIDDDPDSVERN

PA $\beta 12$ $\beta 13$ $\alpha 2$ TT TT $\alpha 3$ TT $\eta 4$ TT 260
PA GATVPLVRLHILITFLSFVWISNTHERRKGLTFRSSFFERMSFALSDDYSDPERVTRIDKRVSPFEARHPLVLAAP
cdADPRT GATVPLVRLHILITFLSFVWISNTHERRKGLTFRSSFFERMSFALSDDYSDPERVTRIDKRVSPFEARHPLVLAAP
cpioia GATVPLVRLHILITFLSFVWISNTHERRKGLTFRSSFFERMSFALSDDYSDPERVTRIDKRVSPFEARHPLVLAAP
cbol GATVPLVRLHILITFLSFVWISNTHERRKGLTFRSSFFERMSFALSDDYSDPERVTRIDKRVSPFEARHPLVLAAP
VIP1 GATVPLVRLHILITFLSFVWISNTHERRKGLTFRSSFFERMSFALSDDYSDPERVTRIDKRVSPFEARHPLVLAAP

PA $\beta 14$ $\beta 15$ 270 280 290 300 310 320
PA IVHVMGRITILSRDITLSDQNTLSQTRHISNTHSIRSRHISEVHGHAEVHAS.FEELIGSSVSAFSPHSHIS
cdADPRT IVHVMGRITILSRDITLSDQNTLSQTRHISNTHSIRSRHISEVHGHAEVHAS.FEELIGSSVSAFSPHSHIS
cpioia IVHVMGRITILSRDITLSDQNTLSQTRHISNTHSIRSRHISEVHGHAEVHAS.FEELIGSSVSAFSPHSHIS
cbol IVHVMGRITILSRDITLSDQNTLSQTRHISNTHSIRSRHISEVHGHAEVHAS.FEELIGSSVSAFSPHSHIS
VIP1 IVHVMGRITILSRDITLSDQNTLSQTRHISNTHSIRSRHISEVHGHAEVHAS.FEELIGSSVSAFSPHSHIS

PA $\beta 16$ TT $\beta 17$ $\beta 18$ $\beta 19$ TT
PA STVAQLSHSLSLAGERTWAZITGCIIMATATKATLIDVYVQDAFTVIVITPTSTSLVLSKNCITATIKAKEM
cdADPRT STVAQLSHSLSLAGERTWAZITGCIIMATATKATLIDVYVQDAFTVIVITPTSTSLVLSKNCITATIKAKEM
cpioia STVAQLSHSLSLAGERTWAZITGCIIMATATKATLIDVYVQDAFTVIVITPTSTSLVLSKNCITATIKAKEM
cbol STVAQLSHSLSLAGERTWAZITGCIIMATATKATLIDVYVQDAFTVIVITPTSTSLVLSKNCITATIKAKEM
VIP1 STVAQLSHSLSLAGERTWAZITGCIIMATATKATLIDVYVQDAFTVIVITPTSTSLVLSKNCITATIKAKEM

PA TT $\beta 20$ TT $\beta 21$ TT $\beta 22$ $\alpha 4$ $\beta 23$ $\beta 24$
PA QLSQILSLDNNHVSRRHAPLALNACDLSSTFRFQVYVFLERIKOIKDQVHONLAFNPFHNGEV
cdADPRT QLSQILSLDNNHVSRRHAPLALNACDLSSTFRFQVYVFLERIKOIKDQVHONLAFNPFHNGEV
cpioia QLSQILSLDNNHVSRRHAPLALNACDLSSTFRFQVYVFLERIKOIKDQVHONLAFNPFHNGEV
cbol QLSQILSLDNNHVSRRHAPLALNACDLSSTFRFQVYVFLERIKOIKDQVHONLAFNPFHNGEV
VIP1 QLSQILSLDNNHVSRRHAPLALNACDLSSTFRFQVYVFLERIKOIKDQVHONLAFNPFHNGEV

PA $\beta 25$ $\alpha 5$ $\beta 26$ TTT $\beta 27$ $\alpha 6$ TT
PA RMVTOSSNLSSEVPLQSLSSLSISILITENE.SHERRVAAKKNLQVEDKTLPELITIGELIEKAFS..ATKGL
cdADPRT RMVTOSSNLSSEVPLQSLSSLSISILITENE.SHERRVAAKKNLQVEDKTLPELITIGELIEKAFS..ATKGL
cpioia RMVTOSSNLSSEVPLQSLSSLSISILITENE.SHERRVAAKKNLQVEDKTLPELITIGELIEKAFS..ATKGL
cbol RMVTOSSNLSSEVPLQSLSSLSISILITENE.SHERRVAAKKNLQVEDKTLPELITIGELIEKAFS..ATKGL
VIP1 RMVTOSSNLSSEVPLQSLSSLSISILITENE.SHERRVAAKKNLQVEDKTLPELITIGELIEKAFS..ATKGL

PA $\beta 28$ $\beta 29$ $\eta 5$ $\beta 30$ $\alpha 7$ $\eta 6$ TT $\beta 31$ T.
PA GNLQDQGRKILFELFENFDQSSQNTIRHISAEHLI. VNNHITVLDKINAKHILITLDEK.
cdADPRT GNLQDQGRKILFELFENFDQSSQNTIRHISAEHLI. VNNHITVLDKINAKHILITLDEK.
cpioia GNLQDQGRKILFELFENFDQSSQNTIRHISAEHLI. VNNHITVLDKINAKHILITLDEK.
cbol GNLQDQGRKILFELFENFDQSSQNTIRHISAEHLI. VNNHITVLDKINAKHILITLDEK.
VIP1 GNLQDQGRKILFELFENFDQSSQNTIRHISAEHLI. VNNHITVLDKINAKHILITLDEK.

PA T $\beta 32$ TT $\beta 33$ $\alpha 8$ $\beta 34$ $\beta 35$ $\alpha 9$ $\beta 36$ TT $\beta 37$ TT T
PA .REHLDENH. PAVGDAESVMEARHREVI. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
cdADPRT .REHLDENH. PAVGDAESVMEARHREVI. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
cpioia .REHLDENH. PAVGDAESVMEARHREVI. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
cbol .REHLDENH. PAVGDAESVMEARHREVI. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
VIP1 .REHLDENH. PAVGDAESVMEARHREVI. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI

PA T $\beta 38$ TT $\beta 39$
PA DMLNISSLRQGRKIFLIRFIR. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
cdADPRT DMLNISSLRQGRKIFLIRFIR. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
cpioia DMLNISSLRQGRKIFLIRFIR. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
cbol DMLNISSLRQGRKIFLIRFIR. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI
VIP1 DMLNISSLRQGRKIFLIRFIR. TEGLIHIDKIDRIKELSGYIVEIDIEGLKVEIDNDRI

PA TT β40 700 α10 710 720 TT
 PATNDKRLFLYLISPIFNHYKVR.....VNAVTKRMTIINHSSENGDYSING
 cdADPRT DANKKIYFADLNEHNSIGNTIYIDGMYPAFQTQHKREALDYIQKYRVEATLOYSGFKDIGTKDKEMRNLGDF
 ap1cta DANKKIYADIKLDLNTGNTIYIDGLYFEFTQTHKEALDYIQKYRVEATLOYSGFKDIGTKDKEMRNLGDF
 ap1cta DANKKIYADLSEFNSGTANYIYLDGLYFEFTQTHKEALDYIQKYRVEATLOYSGFKDIGTKDKEMRNLGDF
 abc2LENNLIYSSSEDKGYDEFFV.....FYVIGSRKSPFHNSCDIHSINR.
 VIP1 SRVGIKLELDGILILIKKGGIHYGEFINDEASPIIEFLQHYVTRYEVTYSSELGFNMSTLESDKIYKDGITK

PA β41 α10 730
 PAIKKILIFSRKGYEFG.....
 cdADPRT NQFKIHYVHLRSYFTGGENIMTYIKRLINVAITPDRKELLVLVSD
 ap1cta NQFKIHYINFESEYFTSGENIMTYIKRLINVAITPDRKELLVLVSD
 ap1cta NQFKIHYVHERSYFTSGENIMTYIKRLINVAITPDRKELLVLVSD
 abc2LSGVFLIELEKLIIT.....
 VIP1 EDETKYSKHEOGLEFDGLNDEKINADITDGRKEMHVEHYNR.